

AGGREY MUHEBWA

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RESEARCH INTERESTS

Application of deep learning and computer vision techniques on satellite imagery for infrastructure measurement and analytics in developing settings. I also apply general machine learning and statistical techniques to analyze and understand the impact of infrastructure on socio-economic development of developing countries.

EDUCATION

University of Massachusetts - Amherst, USA August 2018 - May 2024

Ph.D. in Electrical and Computer Engineering

Advisor: Professor Jay Taneja

Carnegie Mellon University - Africa August 2016 - Dec. 2017

Masters of Science in Electrical and Computer Engineering

Specializations: Machine Learning, Big Data Analytics

Makerere University, Uganda August 2009 - April 2013

Bachelor of Science in Computer Engineering

Specializations: Software Engineering, Signal Processing

RESEARCH AND PUBLICATIONS

- Gabriel Cadamuro, **Aggrey Muhebwa**, and Jay Taneja. Street Smarts: Measuring Intercity Road Quality Using Deep Learning on Satellite Imagery. In the Second ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS 2019), July 2019.
- Gabriel Cadamuro, **Aggrey Muhebwa**, and Jay Taneja. Assigning a Grade: Accurate Measurement of Road Quality Using Satellite Imagery. In the NeurIPS Workshop on Machine Learning for the Developing World (ML4D 19). December 2018.

EXPERIENCE

Stima Lab, MA, USA August 2018 - present

Ph.D Researcher

- Develop, test and evaluate deep learning algorithms for processing, analyzing and making inference on satellite imagery
- Develop algorithms for cleaning and processing large image datasets on GPU clusters

Merck, Sharp & Dorne (MSD) Prague, Czech Republic July 2018 - August 2018

Intern, Structured Experiments

- Prototyped and developed an IoT-enabled smart tag for detecting onset of estrus cycles in cows

Carnegie Mellon University August 2017 - May 2018

Teaching Assistant

- Teaching Assistant for 4 classes; Deep Learning, Big Data Analytics, Introduction to Data Science and Applied Machine Learning courses

Grameen Foundation

Jan 2015 - July 2016

Machine Learning Engineer

- Developed machine learning models for predicting loan repayment in SACCOs based on individual members lending behavior
- Developed an analytics system currently used by Barclays Bank to monitor financial transactions of VLSAs. This improved the credit scoring process

Mountbatten Limited

July 2013 - Dec 2014

Software Engineer (Data Mining, Mapping & Search)

- Implemented custom data mining/search algorithms for DevTrac, a web application used by UNICEF to track location & status of local amenities in Uganda. This improved probability of positive search results by more than 40%
- Designed & implemented data mining and automatic data cleaning algorithms for open government data

HONORS AND AWARDS

- Dean's Fellowship recipient, University of Massachusetts - Amherst (2018-2019)
- Winner, 3rd Annual African Grand Challenge in Technology with a solution that combines IoT and machine learning to detect onset of estrus cycles in cows
- 3rd place, Neural Hackathon 2017 edition (Pittsburgh, Kigali, Qatar). Detecting synaptic signatures of autism in brain scans
- Innovators Founders Fellowship Fund recipient (2016-2017)